IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for on-screen animation of digital entities comprising:

providing a digital world including image object elements;

providing at least one autonomous image entity (AIE); each said AIE being associated with at least one repeatable AIE animation clip defined by a memorized sequence of images representing a given movement, and said at least one AIE being characterized by a) attributes defining said at least one AIE relatively to said image objects elements, and b) at least one behaviour for modifying at least one of said attributes; said at least one AIE including at least one virtual sensor for gathering data information about at least one of said image object elements or other one of said at least one AIE;

initializing said attributes and selecting one of said behaviours for each of said at least one AIE;

for each said at least one AIE:

using said at least one sensor to gather data information about at least one of said image object elements or other one of said at least one AIE; and

using a decision tree for processing said data information resulting in at least one of i) triggering one of said at least one AIE animation clip according to said attributes and selected one of said at least one behaviour, and ii) selecting one of said at least one behaviour.

2. (Original) A method as recited in claim 1, wherein said at least one AIE being associated with a memory for storing said data information; said using a decision tree for processing said data information resulting in at least one of i) triggering one of said at least one AIE animation clip according to said attributes and selected one of said at least one behaviour, ii) selecting one of said at least one behaviour, and iii) modifying said memory.

3. (Original) A method as recited in claim 1, further comprising creating a group of AIEs; wherein said using a decision tree for processing said data information resulting in at least one of

i) triggering one of said at least one AIE animation clip according to said attributes and selected one of said at least one behaviour, ii) selecting one of said at least one behaviour, and iii) adding said at least one AIE to said group of AIEs.

4. (Original) A method as recited in claim 1, wherein said attributes defining said at least one AIE relatively to said image object elements include at least one of:

an "exists" attribute for triggering the existence of said at least one AIE within said digital world;

a "collidable" attribute for allowing said at least one AIE to collide with other AIE or with at least one of said image objects elements;

the radius of a bounding sphere of said at least one AIE;

a maximum right turning angle per frame of said at least one AIE;

a maximum left turning angle per frame of said at least one AIE;

a maximum up turning angle per frame of said at least one AIE;

a maximum down turning angle per frame of said at least one AIE;

a maximum positive change in angular speed of said at least one AIE in degrees per frame^2;

a maximum negative change in angular speed of said at least one AIE in degrees per frame^2;

a maximum angle of deviation from an axis defined within said digital world that a top vector from said at least one AIE have;

a minimum speed in distance units per frame of said at least one AIE;

a maximum speed in distance units per frame of said at least one AIE;

a maximum positive change in speed in distance units per frame^2 of said at least one AIE;

a maximum negative change in speed in distance units per frame^2 of said at least one AIE;

an initial speed of said at least one AIE in distance units per frame when initializing said attributes;

an initial position of said at least one AIE in distance units per frame when initializing said attributes;

an initial orientation of said at least one AIE in distance units per frame when initializing said attributes; and

a current speed in distance units per frame of said at least one AIE.

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5. (Original) A method as recited in claim 1, wherein said image object elements include two-dimensional or three-dimensional graphical representations of a surface; said attributes including at least one of:

an attribute defining whether or not said least one AIE hugs said surface;

an attribute allowing setting whether or not said least one AIE aligns with a normal of said surface; and

an attribute defining an extra height given to said at least one AIE relatively to said surface when said at least one AIE hugs said surface.

6. (Original) A method as recited in claim 5, wherein said surface is a barrier.

7. (Original) A method as recited in claim 1, wherein said image object elements include two-dimensional or three-dimensional graphical representations of at least one of an object, a non-autonomous character, a building, a barrier, a terrain, and a surface.

8. (Original) A method as recited in claim 7, wherein said barrier is defined by a forward direction vector and is used to restrain the movement of at least one of said at least one AIE in a direction opposite said forward direction vector.

9. (Original) A method as recited in claim 7, wherein said barrier is a three-dimensional barrier defined by triangular planes.

10. (Original) A method as recited in claim 7, wherein said barrier is a two-dimensional barrier defined by a line.

11. (Original) A method as recited in claim 7, wherein said terrain are two-dimensional height-fields representation for bounding AIEs.

12. (Original) A method as recited in claim 7, wherein said surface includes triangular planes combinable so as to form three-dimensional shapes for constraining AI Es.

13. (Original) A method as recited in claim 7, wherein said at least one behaviour causes said at least one AIE to avoid said barrier.

14. (Original) A method as recited in claim 1, wherein said digital world is defined by parameters selected from the group consisting of a width, a depth, a height, and a center position.

15. (Original) A method as recited in claim 1, wherein said attributes include at least one internal state attribute defining a non-apparent characteristic of said at least one AIE; said at least one behaviour is a state change behaviour for modifying said at least one internal state attribute.

16. (Original) A method as recited in claim 1, wherein said at least one behaviour is a locomotive behaviour for causing said at least one AIE to move.

17. (Original) A method as recited in claim 1, wherein said at least one behaviour includes a plurality of behaviours; each of said plurality of behaviours producing a behavioural steering force defined by an intensity;

   whereby, in operation, each of said plurality of behaviours producing a steering force on said at least one AIE proportionate to said intensity.

18. (Original) A method as recited in claim 1, wherein said at least one behaviour includes a plurality of behaviours; each of said plurality of behaviours producing a behavioural steering force and being assigned a priority;

   whereby, in operation, each of said plurality of behaviours being assigned to said at least one AIE by descending priority.

19. (Original) A method as recited in claim 1, wherein said at least one behaviour being characterized by a blend time defining a number of frame that said at least one behaviour take to change from an active state to an inactive state.

20. (Original) A method as recited in claim 1, wherein said at least one behaviour is triggered based on one of said AIE's attributes.

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21. (Original) A method as recited in claim 20, wherein said at least one behaviour is triggered based on a distance of said at least one AIE to one of said image object elements and another AIE.

22. (Original) A method as recited in claim 20, wherein said at least one behaviour is characterized by an activation radius defining the minimal distance between said at least one AIE and said targeted one of said image object elements.

23. (Original) A method as recited in claim 20, wherein said at least one behaviour causes said at least one AIE to perform an action selected form the group consisting of:
    moving towards another AIE;
    fleeing from another AIE;
    looking at another AIE;
    orbiting said targeted one of said image object elements or another AIE;
    aligning with at least one another AIE;
    joining with at least one another AIE; and
    keeping a distance to at least one another AIE.

24. (Original) A method as recited in claim 1, wherein said at least one behaviour further modifying a targeted one of said image object elements or another AIE.

25. (Original) A method as recited in claim 1, wherein said at least one behaviour causes said at least one AIE to perform an action selected form the group consisting of:
    avoiding one of said image object elements or another AIE;
    accelerating said at least one AIE;
    maintaining a constant speed;
    moving randomly within a selected portion of said digital world; and
    attempting to face a predetermined direction.

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26. (Original) A method as recited in claim 1, wherein said at least one virtual sensor is a vision sensor for detecting said at least one of said image object elements or another one of said at least one AIE when said at least one of said image object elements or another one of said at least one AIE is within a predetermined distance from said at least one AIE and within a predetermined frustum issued therefrom.

27. (Original) A method as recited in claim 1, wherein said at least one virtual sensor is a property sensor for detecting at least one attribute of said other one of said at least one AIE.

28. (Original) A method as recited in claim 1, wherein said at least one virtual sensor is a random sensor returning a random number within a specified range.

29. (Original) A method as recited in claim 1, wherein said data information is stored in a datum.

30. (Original) A method as recited in claim 29, wherein said virtual sensor allows for setting a value stored in said datum based on one of said attributes.

31. (Original) A method as recited in claim 29, wherein said virtual sensor allows for setting a value stored in said datum based on whether or not a predetermined one of said at least one AIE animation clip is triggered.

32. (Original) A method as recited in claim 1, wherein in i) said at least one AIE animation clip is triggered after an active animation associated to said at least one AIE is completed.

33. (Original) A method as recited in claim 1, wherein in i) a number of frame that said at least one animation clip will take to perform is provided before said at least one animation clip is triggered.

34. (Original) A method as recited in claim 1, wherein said attributes include the speed of said at least one AIE; in i) said at least one AIE animation clip being played at a speed depending on said speed of said at least one AIE.

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35. (Original) A method as recited in claim 1, wherein in i) said at least one animation clip is scaled and a number of cycle is provided for said at least one animation clip before said at least one animation clip is triggered.

36. (Original) A method as recited in claim 1, wherein in i) if one of said at least one animation clip associated to said at least one AIE plays before said at least one animation clip is triggered then playing an animation transition before said at least one animation clip is triggered.

37. (Original) A method as recited in claim 1, wherein in i) if one of said at least one animation clip associated to said at least one AIE plays before said at least one animation clip is triggered then said at least one animation clip is triggered and a blend animation is created between said one of said at least one animation clip associated to said at least one AIE playing before said at least one animation clip is triggered and said at least one animation clip.

38. (Original) A method as recited in claim 1, wherein said digital world includes at least one marking for modifying on contact at least one of said attributes and said at least one behaviour of said at least one AIE.

39. (Original) A method as recited in claim 38, wherein said at least one marking is defined by a bounding sphere having a radius.

40. (Original) A method as recited in claim 38, wherein said digital world includes a plurality of linked markings defining a path.

41. (Original) A method as recited in claim 40, wherein said at least one behaviour causes said at least one AIE to use said path to navigate within said world towards one of said image object elements.

42. (Original) A method as recited in claim 40, wherein some of said plurality of markings are linked with edges so as to define a waypoint network; and edge between two of said plurality of

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linked markings allowing said at least one AIE to move between said two of said plurality of linked markings.

43. (Original) A method as recited in claim 42, wherein said two of said plurality of linked markings being consecutive.

44. (Original) A method as recited in claim 42, wherein said at least one behaviour causes said at least one AIE to use said waypoint network to navigate within said world towards one of said image object elements.

45. (Currently Amended) A system for on-screen animation of digital entities comprising:

   an art package to create a digital world including image object elements and at least one autonomous image entity (AIE) and to create repeatable AIE animation clips, a repeatable AIE animation clip being defined by a memorized sequence of images representing a given movement;

   an artificial intelligence agent to associate to an AIE a) attributes defining said AIE relatively to said image objects elements, b) a behaviour for modifying at least one of said attributes, c) at least one virtual sensor for gathering data information about at least one of said image object elements or other AIEs, and d) an AIE animation clips; said artificial intelligence agent including an autonomous image entity engine (AIEE) for updating each AIE's attributes and for triggering for each AIE at least one of a current behaviour and one of said at least one animation clip based on said current behaviour and said data information gathered by said at least one sensor.

46. (Original) A system as recited in claim 45, further comprising a user interface for displaying and editing at least one of said at least one AIE and said image object elements. .

47. (Original) A system as recited in claim 46, further comprising a duplicating tool to simultaneously edit a plurality of AIEs.

48. (Currently Amended) An artificial intelligence agent for on-screen animation of digital
entities comprising:

> means to associate to an AIE a) attributes defining said AIE relatively to said image objects
> elements, b) a behaviour for modifying at least one of said attributes, c) at least one virtual
> sensor for gathering data information about at least one of said image object elements or
> other AIEs, and d) an at least one repeatable AIE animation clipsclip, a repeatable AIE
> animation clip being defined by a memorized sequence of images representing a given
> movement; and

> an autonomous image entity engine (AIEE) for updating each AIE's attributes and for
> triggering for each AIE at least one of a current behaviour and one of said at least one
> animation clip based on said current behaviour and said data information gathered by said
> at least one sensor.

49. (Currently Amended) A system for on-screen animation of digital entities comprising:

> means for providing a digital world including image object elements;

> means for providing at least one autonomous image entity (AIE);

> each said AIE being associated with at least one repeatable AIE animation clip defined by a
> memorized sequence of images representing a given movement, and said at least one AIE
> being characterized by a) attributes defining said at least one AIE relatively to said image
> objects elements, and b) at least one behaviour for modifying at least one of said attributes;
> said at least one AIE including at least one virtual sensor for gathering data information
> about at least one of said image object elements or other one of said at least one AIE;

> means for initializing said attributes and selecting one of said behaviours for each of said at
> least one AIE;

> means for using said at least one sensor to gather data information about at least one of the
> image object elements or other one of said each said at least one AIE;

> means for using a decision tree for processing said data information;

> means for triggering one of said at least one AIE animation clip according to said attributes
> and selected one of said at least one behaviour; and

means for selecting one of said at least one behaviour.

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